

Title (en)

Solvent free quaternization of tertiary amines with dimethylsulfate.

Title (de)

Lösungsmittelfreie Quaternisierung von tertiären Aminen mit Dimethylsulphat.

Title (fr)

Quaternisation d'amines tertiaires avec le diméthylsulphate en l'absence de solvant.

Publication

**EP 0684223 A1 19951129 (EN)**

Application

**EP 95107474 A 19950517**

Priority

US 24780494 A 19940523

Abstract (en)

A process for a high temperature, solvent free quaternization of certain tertiary amines using dimethylsulfate to produce quaternary ammonium methyl sulfates which may be used in fabric softening and other applications, is disclosed.

IPC 1-7

**C07C 209/20**; **C07C 213/00**; **C07C 227/00**

IPC 8 full level

**C07C 303/32** (2006.01); **C07C 209/00** (2006.01); **C07C 307/02** (2006.01)

CPC (source: EP US)

**C07C 209/00** (2013.01 - EP US)

Citation (applicant)

- US 4515723 A 19850507 - BILLENSTEIN SIEGFRIED [DE], et al
- US 4228096 A 19801014 - BOZZELLI JOHN W, et al
- EP 0375029 A2 19900627 - PROCTER & GAMBLE [US]
- WO 9101295 A1 19910207 - HENKEL KGAA [DE]

Citation (search report)

- [X] WO 9113859 A1 19910919 - HENKEL KGAA [DE]
- [A] EP 0288857 A2 19881102 - HENKEL KGAA [DE]
- [A] EP 0012296 A1 19800625 - HENKEL KGAA [DE]

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CN102180803A; US10160850B2

Designated contracting state (EPC)

BE DE ES FR GB IT NL SE

DOCDB simple family (publication)

**US 5463094 A 19951031**; CA 2149815 A1 19951124; EP 0684223 A1 19951129; JP H07316124 A 19951205

DOCDB simple family (application)

**US 24780494 A 19940523**; CA 2149815 A 19950519; EP 95107474 A 19950517; JP 12256095 A 19950522